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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,667	09/17/2003	Shinsuke Toyomasu	242865US0	2484
22850	7590	11/15/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			PEZZUTO, HELEN LEE	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/663,667

Applicant(s)

TOYOMASU ET AL.

Examiner

Helen L. Pezzuto

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
 Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 October 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 7-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-19 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/17/03, 2/9/04</u>   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 1-6, and 19 in the reply filed on 10/19/04 are acknowledged. The traversal is on the ground(s) that the groupings are not distinct and the office has not shown a burden exists in searching all the claims. This is not found persuasive because the transparent resin is generic to any optical utility, inclusive of non-stretch molding films. As evidence by the differences in their classification, a search of all the claims would impose a burden on the office.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 7-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 10/19/04.

***Claim Rejections - 35 USC § 102/103***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent' unless -

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6, and 19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over GB 1066715 or Barr et al. (US-832) or Le-Khac (US-700).

GB 1066715 or its US equivalence to Barr et al. (US 3,352,832) discloses a process of producing N-substituted maleimide copolymers, suitably used as transparent optical materials. Prior art copolymers comprise N-phenyl maleimides such as N-halogen-substituted-phenyl maleimides as shown in Example 4 and N-(2-methylphenyl)maleimide (see GB-715, page 1, lines 33 to 38; page 2, line 13) as expressed in claim 3, and an  $\alpha$ -olefin such as isobutene which clearly embrace the instant olefin unit (i) (see GB-715, page 1, lines 45-61; page 4, Example 4). Prior art further teaches fabricating the resulting copolymer into

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optical articles such as sheets, thus, fall within the scope of the optical film, and optical utility expressed in claims 4-6, and 19 (see GB-715, page 3, lines 99-129).

US 4,605,700 to Le-Khac discloses a miscible polymer composition comprising a N-aryl substituted maleimide/C<sub>2</sub>-C<sub>4</sub>  $\alpha$ -olefin copolymer and an acrylonitrile copolymer. The instant copolymer having the recited weight average molecular weight is immediately envisaged in prior art N-aryl substituted maleimide/ $\alpha$ -olefin copolymer (col. 2, lines 29-47). US-700 further exemplified injection molding the resulting polymer into test specimen (col. 5, Example 5), and hence, encompasses the instant optical film expressed in the present claims.

Prior art discussed are silent regarding the instant recited negative birefringence property. GB-715 and US-832 are further silent regarding the molecular weight of the resulting polymer. The examiner is of the position that these properties, though not explicitly shown by the references, is considered inherent in the prior art copolymer because identical N-phenyl substituted maleimide and  $\alpha$ -olefin monomeric units are employed, and the further suggestion of producing molded optical materials in the

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references. Accordingly, the burden is placed upon the applicant to provide clear evidence that the respective copolymers so in fact differ. In any event, in light of the clear suggestion of using the copolymer in the manufacturing of molded articles, one skilled in the art would envisage the recited molecular weight and negative birefringence under the general conditions of prior art, motivated by the reasonable expectation of success, absent a showing of unexpected results.

***Claim Rejections - 35 USC § 103***

6. Claims 1-6, and '19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-117334 in view of Harris et al. (US-916) .

JP-334 discloses a low birefringence optical copolymer derived from 30-98 mol% of a N-phenyl substituted maleimide and/or N-alkylmaleimide, and 70-2 mol% of an  $\alpha$ -olefin. Suitable N-phenyl substituted maleimides include N-(2-methylphenyl) maleimide, N-(2,6-diethylphenyl) maleimide, and N-(2,6-diisopropylphenyl) maleimide as expressed in claim 3 (page 3, col. 3, [0010]). Copolymers composed of N-(2,6-diethylphenyl) maleimide and isobutene having the instant molecular weight was exemplified. Prior art teaches the instant optical copolymer having low birefringence, but

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does not specifically exemplify negative birefringence as presently claimed. Prior art does, however, disclose controlling the negative birefringence via steric manipulation of the phenyl moiety on the maleimide unit (page 4, col. 5, [0022] col. 6, [0026]). Furthermore, US 5,344,916 specifically teaches the desirability to produce a negative birefringence film for use in liquid crystal displays, by controlling the rigidity, linearity, and symmetry of analogous polyimide polymer backbone.

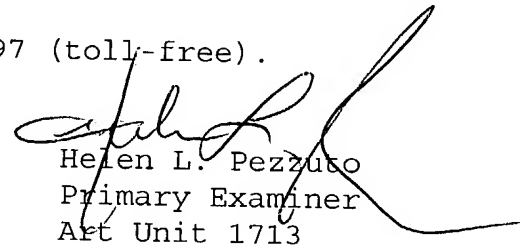
Accordingly, it would have been obvious to one skilled in the art to produce the optical copolymer disclosed in JP-334, having negative birefringence property as taught in US-916, motivated by the reasonable expectation of success in the manufacturing of LCD films.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen L. Pezzuto whose telephone number is (571) 272-1108. The examiner can normally be reached on 8 AM to 4 PM, Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Helen L. Pezzuto  
Primary Examiner  
Art Unit 1713

hlp